

## CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1           1.       An enclosed carton for carrying a plurality of cylindrical containers each  
2       with two ends and a diameter, and an axis between the ends, with the containers stacked  
3       upon their ends in two tiers with a plurality of layers of containers in each tier, the carton  
4       having two ends, at least one of which is an exiting end capable of permitting containers  
5       to exit the carton, the carton having a length between the two ends approximately equal to  
6       the sum of the diameters of the number of containers to be contained in a layer in a tier,  
7       the carton comprising:

8               a.       a bottom panel, top panel and foldably attached adjoining bottom  
9       side and top side panels, the carton having a width between the bottom side and top side  
10      panels approximately equal to the sum obtained by multiplying the diameter of a  
11      container to be contained in a layer by the number of layers in a tier, the carton being  
12      designed so that the axes of said cylindrical containers are perpendicular to said bottom  
13      panel when placed in the carton;

14              b.       said exiting end having a bottom tear line for forming a container  
15      dispenser opening that extends at least partially across said exiting end spaced from said  
16      bottom side panel on which the carton is designed to rest when dispensing containers at a  
17      distance from said bottom side panel sufficient to restrain at least the layer of containers  
18      adjacent said bottom side panel from rolling out when the dispenser is open, a tear line in  
19      said exiting end extending from said bottom tear line adjacent to said top panel into said  
20      top side panel a sufficient distance and location to permit a person to grasp and remove a  
21      container one at a time from the tier that is adjacent said top side panel, said tear line  
22      extending into said exiting end adjacent said bottom panel, with all of said tear lines  
23      being interconnected to form a dispenser; and

24              c.       a divider to be placed between the tiers of containers as the carton  
25      is filled with containers, the divider having a width slightly less than the width of the  
26      carton, the divider having a length greater than the length of the carton,

27 the divider having two ends, with one end to be placed adjacent the existing end of the  
28 carton, said one end having a split that extends a distance into the divider so that said one  
29 end of the divider can be folded so it is perpendicular to the rest of the divider, with a  
30 portion of the end of the divider being on one side of the split, said portion being located  
31 adjacent to where the dispenser opening is to be formed by tearing the tear lines, said  
32 split in the divider being located so that said portion of the divider can be moved to be  
33 adjacent one tier of containers so containers in the other tier can be removed from the  
34 carton without being impeded by the divider when the dispenser is open;  
35 d. means to close the carton.

1 2. The carton of claim 1 in which the divider has a split on each end that  
2 extends a distance into the divider.  
3

1 3. The carton of claim 1 in which the tear line in said exiting end which  
2 extends from said bottom tear line adjacent to said top panel is spaced far enough from  
3 said top panel to prevent the containers in the layer adjacent said top panel in the tier  
4 adjacent said top panel from rolling out when said dispenser is open, said tear line which  
5 extends into said exiting end adjacent said bottom panel being spaced far enough from  
6 said bottom panel to prevent the containers in the layer adjacent said top side panel in the  
7 tier adjacent said bottom panel from rolling out when said dispenser is open, with the  
8 location of the bottom tear line and tear line adjacent said top panel and tear line adjacent  
9 said bottom panel being such to prevent or retain all of the containers in the carton from  
10 accidentally rolling out when the dispenser is open.

1 4. The carton of claim 3 in which the split in the divider is located in relation  
2 to the bottom tear line so said portion of the divider located adjacent to where the  
3 dispenser opening is to be formed can be moved to be adjacent one tier of containers so  
4 containers in the other tier can be removed from the carton without being impeded by the  
5 divider when the dispenser is open.

1           5.       The carton of claim 4 in which the divider has a split in each end that  
2 extends a distance into the divider.

1           6.       The carton of claim 1 in which all of the layers of containers in each tier  
2 except for the top layer are prevented from rolling out when the dispenser is open by said  
3 bottom tear line being placed a sufficient distance from said bottom side panel with the  
4 top layer of containers in each tier being prevented from rolling out by the placement of  
5 the tear lines in the exiting end adjacent said top panel and said bottom panel.

1           7.       The carton of claim 1 which is designed to hold the containers in each tier  
2 at a height of three containers adjacent the exiting end with the bottom tear line spaced a  
3 sufficient distance from the bottom said panel to prevent the containers in each tier  
4 adjacent the bottom side panel and exiting end and the containers immediately above it  
5 and adjacent the exiting end from rolling out when the dispenser is open.

1           8.       The carton of claim 7 in which:

2           a.       said tear line in said exiting end of the carton adjacent said top  
3 panel extends at an angle and location from said bottom tear line to the top line between  
4 said top panel and said exiting end and extends along said top line until it reaches the top  
5 side panel where said tear line extends into said top side panel, said angle and location  
6 from said bottom tear line being sufficient to prevent the containers adjacent said  
7 dispenser on top of the two layers of containers in the tier adjacent said top panel from  
8 rolling out but permitting the containers to be grasped for removal when the dispenser is  
9 open; and

10          b.       said tear line in said exiting end adjacent said bottom panel extends  
11 at an angle and location from said bottom tear line to the bottom line between said bottom  
12 panel and said exiting end and extends along said bottom line until it reaches the top side  
13 panel where said tear line extends into said top side panel, said angle and location from  
14 said bottom tear line adjacent said dispenser being sufficient to prevent the container  
15 adjacent the dispenser on top of the two layers of containers in the tier adjacent said

1 bottom panel from rolling out but permitting the container to be grasped for removal  
2 when the dispenser is open.

1 9. The carton of claim 1 which has only one exiting end.

1 10. An enclosed carton for carrying a plurality of containers, each with two  
2 ends and an axis between the ends, with the containers stacked upon their ends in two  
3 tiers with a plurality of layers of containers in each tier, the carton having two ends at  
4 least one of which is an exiting end, the carton having a length between the two ends  
5 approximately equal to the sum of the diameters of the number of containers to be  
6 contained in a layer in a tier, with a dispenser capable of permitting containers to exit one  
7 at a time from each tier, the carton comprising:

8 a. a bottom panel, top panel, and foldably attached adjoining bottom  
9 side and top side panels, the carton having a width between the bottom side and top side  
10 panels approximately equal to the sum obtained by multiplying the diameter of a  
11 container to be contained in a layer by the number of layers in a tier, with the carton  
12 being designed so the axes of said containers are perpendicular to said bottom panel when  
13 placed in the carton;

14 b. said exiting end having four flaps for closing the end, with a  
15 bottom side flap foldably attached to said bottom side panel, a top side flap foldably  
16 attached to said top side panel, a top end flap foldably attached to said top panel, a  
17 bottom end flap foldably attached to said bottom panel, said dispenser being formed by a  
18 pair of tear lines extending from a location in said top side panel a sufficient distance and  
19 location from its foldable attachment to said top side flap so as to permit a person to  
20 grasp a container in each tier adjacent said dispenser when open and remove the  
21 container, one of said pair of tear lines extending into said bottom end flap adjacent said  
22 bottom panel but leaving a projection in said bottom end flap which is attached to said  
23 bottom panel so that when said dispenser is open, the projection prevents at least the  
24 container adjacent said top side panel in the tier of containers adjacent said bottom panel  
25 and dispenser from rolling out when said dispenser is open, the other of said pair of tear  
26 lines extending into said top end flap adjacent said top panel but leaving a projection in

1 said top end flap which is attached to said top panel so that when the dispenser is open  
2 the projection prevents at least the container adjacent the top side panel in the tier of  
3 containers adjacent the top panel and dispenser from rolling out when the dispenser is  
4 open, said pair of tear lines then extending towards each other so the portion of said top  
5 end flap between the tear lines in said top end flap and said top side flap is removed when  
6 the dispenser is open, and the portion of the bottom end flap between the tear line in said  
7 bottom end flap and said top side flap is removed when the dispenser is open and the  
8 portion of said top side panel between the tear lines in the top side panel and the entire  
9 top side flap are removed, with the bottom side flap remaining intact when the dispenser  
10 is opened, and said bottom side flap having sufficient height to prevent at least the layer  
11 of containers adjacent the bottom side panel from rolling out of the carton when said  
12 dispenser is open with the location of all the tear lines being arranged so that none of the  
13 containers roll out when the dispenser is open; and

14 c. a divider to be placed between the tiers of containers as the carton  
15 is filled with containers, the divider having a width slightly less than the width of the  
16 carton, the divider having a length greater than the length of the carton, the divider  
17 having two ends, with one end to be placed adjacent the existing end of the carton, said  
18 one end having a split that extends a distance into the divider so that said one end of the  
19 divider can be folded so it is perpendicular to the rest of the divider, with a portion of the  
20 end of the divider being on one side of the split, said portion being located adjacent to  
21 where the dispenser opening is to be formed by tearing the tear lines, said split in the  
22 divider being located so that said portion of the divider can be moved to be adjacent one  
23 tier of containers so containers in the other tier can be removed from the carton without  
24 being impeded by the divider when the dispenser is open;

25 d. means to close the carton.

1 11. The carton of claim 10 in which the height of the bottom end flap is  
2 sufficient to prevent all but the top layer of containers from rolling out when the  
3 dispenser is open and the projections in said top end flap and said bottom end flap are  
4 sufficient to prevent the containers in the top layer from rolling out when the dispenser is  
5 open.

1           12.     The carton of claim 10 in which the divider has a split on each end that  
2 extends a distance into the divider.

1           13.     The carton of claim 12 in which the split in the divider is located in  
2 relation to the bottom tear line so said portion of the divider located adjacent to where the  
3 dispenser opening is to be formed can be moved to be adjacent one tier of containers so  
4 containers in the other tier can be removed from the carton without being impeded by the  
5 divider when the dispenser is open.

1           14.     An enclosed carton with 24 cylindrical containers, each with two ends and  
2 a diameter, and an axis between the ends, with the containers stacked upon their ends in  
3 two tiers with three layers of containers in each tier, the carton having two ends at least  
4 one of which is an exiting end, with a dispenser capable of permitting containers to exit  
5 one at a time from each tier, the carton having a length between the two ends  
6 approximately equal to the sum of the diameters of four containers, the carton  
7 comprising:

8                 a.     a bottom panel, top panel, and foldably attached adjoining bottom  
9 side and top side panels, the carton having a width between the bottom side and top side  
10 panels approximately equal to the sum of the diameters of three containers, with the  
11 carton being designed so the axes of said cylindrical containers are perpendicular to said  
12 bottom panel when placed in the carton;

13                 b.     said carton containing 24 containers in a 3 by 4 configuration in  
14 each tier;

15                 c.     said exiting end having four flaps for closing the end, with a  
16 bottom side flap foldably attached to said bottom side panel, a top side flap foldably  
17 attached to said top side panel, a top end flap foldably attached to said top panel, a  
18 bottom end flap foldably attached to said bottom panel, said dispenser being formed by a  
19 pair of tear lines extending from a location in said top side panel a sufficient distance and  
20 location from its foldable attachment to said top side flap so as to permit a person to

1 grasp a container in each tier adjacent said dispenser when open and remove the  
2 container, one of said pair of tear lines extending into said bottom end flap adjacent said  
3 bottom panel but leaving a projection in said bottom end flap which is attached to said  
4 bottom panel so that when said dispenser is open, the projection prevents at least the  
5 container adjacent said top side panel in the tier of containers adjacent said bottom panel  
6 and dispenser from rolling out when said dispenser is open, the other of said pair of tear  
7 lines extending into said top end flap adjacent said top panel but leaving a projection in  
8 said top end flap which is attached to said top panel so that when the dispenser is open  
9 the projection prevents at least the container adjacent the top side panel in the tier of  
10 containers adjacent the top panel and dispenser from rolling out when the dispenser is  
11 open, said pair of tear lines then extending towards each other so the portion of said top  
12 end flap between the tear lines in said top end flap and said top side flap is removed when  
13 the dispenser is open, and the portion of the bottom end flap between the tear lines in said  
14 bottom end flap and said top side flap is removed when the dispenser is open and the  
15 portion of said top side panel between the tear lines in the top side panel and the entire  
16 top side flap are removed, with the bottom side flap remaining intact when the dispenser  
17 is opened, and said bottom side flap having sufficient height to prevent at least the layer  
18 of containers adjacent the bottom side panel from rolling out of the carton when said  
19 dispenser is open with the location of all the tear lines being arranged so that none of the  
20 containers roll out when the dispenser is open;

21 d. a divider between the two tiers of containers, the divider having a  
22 width slightly less than the width of the carton, the divider having a length greater than  
23 the length of the carton, the divider having two ends, with one end being adjacent the  
24 exiting end of the carton, said one end having a split that extends a distance into the  
25 divider so that said one end of the divider can be folded so it is perpendicular to the rest  
26 of the divider, with the portion of the end of the divider on one side of the split being  
27 located adjacent to where the dispenser opening is formed by tearing the tear lines, said  
28 split in the divider being located so that said portion of the divider can be moved to be  
29 adjacent one tier of containers so containers in the other tier can be removed from the  
30 carton without being impeded by the divider when the dispenser is open; and

31 e. means to close the carton.

1           15.     The carton of claim 14 in which the divider has a split on each end that  
2 extends a distance into the divider.

1           16     The carton of claim 14 in which the height of the bottom end flap is  
2 sufficient to prevent all but the top layer of containers from rolling out when the  
3 dispenser is open and the projections is said top end flap and said bottom end flap are  
4 sufficient to prevent the containers in the top layer from rolling out when the dispenser is  
5 open.

1           17.     The carton of claim 14 in which the tear lines in the bottom end flap and  
2 top end flap turn towards each other as viewed when the carton is erected, after forming  
3 said projections so as to leave a portion of material out of which the carton is constructed  
4 for attachment to said bottom side flap so the exiting end of the carton is held secure  
5 when said dispenser is open..

1           18.     The carton of claim 14 in which the tear lines in the top end flap and  
2 bottom end flap extend towards each other as viewed when the carton is erected to form a  
3 bottom tear line with two ends with the end of the tear line in said top end flap being  
4 angled toward the top side flap and at a location to form the projection to prevent the  
5 rolling out of a container in the top layer adjacent the top panel and then intersecting the  
6 fold line between said top panel and top end flap and extending along the fold line until it  
7 enters the top side panel, and the end of the tear line in the bottom end flap being angled  
8 towards the top side flap and at a location to form the projection to prevent the rolling out  
9 of a container in the top layer adjacent the bottom panel and then intersecting the fold line  
10 between said bottom panel and bottom end flap and extending along the fold line until it  
11 enters into said top side panel.

1           19.     The carton of claim 14 in which the bottom end flap has sufficient height  
2 to prevent the layer of containers adjacent the bottom side flap and the layer immediately  
3 above such layer from rolling out of the carton when said dispenser is open.